

BOSTON
MEDICAL LIBRARY
8 THE FENWAY

BOSTON MEDICAL LIBRARY
in the Francis A. Countway
Library of Medicine ~ *Boston*

AN
A C C O U N T
OF THE *21*
PLAGUE
WHICH
RAGED AT MOSCOW,
IN
1771.

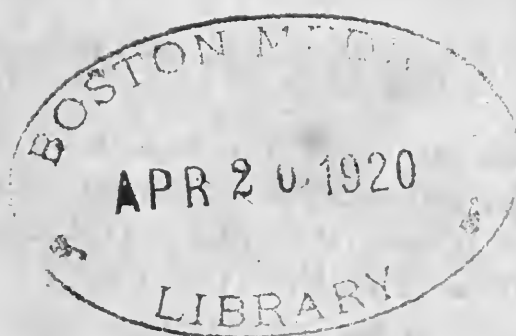
a
BY CHARLES DE MERTENS, M. D.
MEMBER OF THE MEDICAL COLLEGES OF VIENNA AND
STRASBURG, FORMERLY IMPERIAL AND ROYAL
CENSOR, AND CORRESPONDING MEMBER
OF THE MEDICAL SOCIETY
AT PARIS.

TRANSLATED FROM THE FRENCH, WITH NOTES.

L O N D O N :
PRINTED FOR F. AND C. RIVINGTON, NO. 62,
ST. PAUL'S CHURCH-YARD.

1799.

17391



P R E F A C E.

HISTORIES of the Plague, exhibiting the modifications it undergoes in different climates, must at all times and in all places be acceptable, if not to the public at large, at least to that class of persons who make the art of medicine their study and employ : But, to a country situated like our own, histories of this terrible disorder occurring in the northern parts of Europe are more particularly interesting, by holding up to our view a picture of what it probably would be, whenever it should visit us again. Such a picture is presented to us in the history of the plague which depopulated Moscow and other parts of the Russian empire,

in the year 1771, and which forms the subject of the following pages. What, at the present time, must give a greater degree of interest to such a subject, is the danger to which we are exposed of importing the pestilential contagion from America *, on the one hand, and from Turkey and the Levant on the other : For, although the cold has, happily, suppressed for the present the pestilence which has been committing such dreadful ravages at Philadelphia and New York ; yet is it to be feared that it may be retained in many houses, and lie dormant in various goods, ready to break out again, whenever it shall be favoured by the weather † : And no

* Whatever doubts might have been entertained, as to the real nature of the yellow fever, on its first appearance in North America, I believe almost all physicians are now agreed that it is the plague, with such modifications as are easily referable to difference of climate and different mode of living.

† This can hardly fail to be the case until the American government shall have recourse to some of those vigorous measures for eradicating the contagion which are mentioned in the following pages.

one who is acquainted with the nature of that contagion can deny the possibility of its importation from America into this country, either now or hereafter, by infected persons or infected merchandise. On the other hand, are we not threatened with a similar danger from the East? In executing the hostile operations which are going forwards in the Mediterranean, it seems scarcely possible for our fleets and armies to keep clear of contagion. No nation was ever long engaged in a war with the Turks, without taking the plague. In this respect they are as much to be dreaded by their friends as their foes. If, in the present contest, Italy, and France, and England shall escape this scourge, it will form an exception to past events, which all Europe must devoutly pray for.

Under these circumstances the Translator thought it would be useful to call the attention of the practitioners in medicine of this country, to the subject of pestilential contagion, by publishing the following Account of the Plague at Moscow in the year 1771.

Besides the narrative of the rise and progress of the disorder, and the description of its symptoms and treatment, this account contains also a detail of the methods which were successfully employed in that city for checking and totally extinguishing the contagion ; and in particular a detail of the means by which a large edifice, situated in the centre of Moscow, and containing about one thousand four hundred persons, was preserved from the pestilence during the whole of the time that it raged there.

This account is translated from a treatise republished in French, and originally written in Latin by Dr. Mertens, under the following title : “ *Traité de la Peste, contenant l’Histoire de celle qui a régné à Moscou en 1771 ; par Charles de Mertens, Docteur en Médecine, &c. ouvrage publié d’abord en Latin * ; actuellement mis en François, &c. à Vienne, 1784.* ”

The author (who was physician to the

* In a work, entitled *Observationes de Febris putridis, de Peste, &c.* published at Vienna, in 1778.

Foundling-Hospital, at Moscow, and resided in that city during the whole of the time that the plague raged there) divides his treatise into four chapters ; in the first of which he gives a history of the plague as it appeared at Moscow ; in the second, he treats of the diagnosis : in the third, of the curative treatment ; and in the fourth, of the precautions or methods of prevention.

So many works have been published on the plague, that whoever writes a regular treatise on this disorder cannot avoid repeating many observations that have been made by others before him. Hence, instead of dividing the present pamphlet into chapters and sections, and following the original word for word throughout ; the translator has taken the liberty of extracting from the two last chapters those parts only which contain new observations, or which have an immediate reference to the narrative ; which last he has translated entire, excepting half a dozen lines at the beginning, that seem to have been introduced by the author for no other purpose

pose but that of quoting professor *Schreiber's** work on the plague, which broke out in the Ukraine in the years 1738 and 1739.

Besides the preface †, and some other matters noticed in their respective places, the following topics of discussion have been omitted; viz. 1st. *the comparison between the plague and the smallpox*; 2d. *the reflexions on the inoculation of the plague*; 3d. *the precautions to be employed in wars with the Turks*;

* *Schreiber* Observat. et Cogitat. de Pestilentia quæ 1738 & 1739, in Ukrania grassata est.

† The author's preface or introduction is wholly controversial. It consists of a reply to Mr. *Samoilowitz*, who had attempted, in a very illiberal manner, to detract from the merit of the author's publication. This reply is accompanied with copies of the certificates and testimonials received from the lieutenant of the police, the governours of the Foundling-Hospital, the lieutenant-general of Moscow, Count Panin, the privy counsellor de Betzky, &c. relative to his advice and exertions during the time of the plague. These vouchers completely refute his adversary's charges; but as they and the rest of the preface present no facts relative to the history or treatment of the disorder, they cannot be interesting to any but the author's friends, and are therefore omitted.

and 4th. *the precautions continually necessary in places exposed to the pestilential contagion.*

These topics have been omitted, because with regard to the first, as the smallpox and the plague agree in no other respect but in that of being propagated by contagion, a comparison between them seems to be quite unnecessary; because, as to the second, the inoculation of the plague is proved to be useless by the well-established fact, that the same person is susceptible of taking it several times *; and because with regard to the third and fourth points, they only lead to repetitions of general and particular precautions mentioned in other parts of the pamphlet, or suggest hints which do not apply to an insular situation like ours.

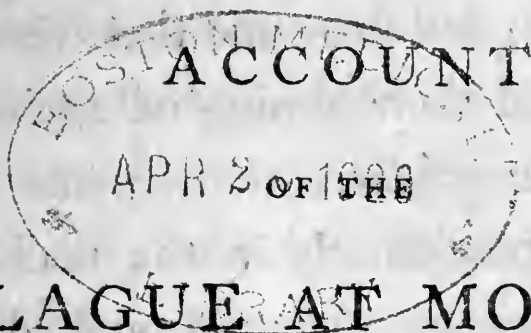
Next to a detail of all the events which took place during the raging of the plague

* Notwithstanding this, Mr. *Samoïlowitz* contends strenuously for the inoculation of this disorder, in a pamphlet entitled "*Memoire sur l'Inoculation de la Peste, &c.*" *Strasbourg, 1782.*"

at Moscow, the translator has especially aimed at a full and accurate delineation of the symptoms. In doing this, he has taken the pains to compare the description given by Dr. *Mertens*, with those of two other writers on the same subject; viz. *Orræus* and *Samoïlowitz*. Thus he flatters himself that all the different types and modifications which the plague assumes in the Northern parts of Europe, are here developed in such a manner, as to enable those who have never seen the disorder, to detect it on its first appearance, or in its early progress, should this country have the misfortune to be visited by it again.

January 2, 1799.

AN



PLAGUE AT MOSCOW.

IN 1769 war broke out between the Russians and Turks. The year following intelligence was received that the Turks had carried the plague into Wallachia and Moldavia, where it was making great ravages; and that in the town of Jassy a number of Russians had been carried off by a disorder, which, on its first appearance, was called by some of the faculty, a malignant fever; but which the most eminent physicians in the place declared to be the plague. *Baron Asch*, first physician to the army, sent an account of this disorder in a letter, written in German, to his brother, a physician at Moscow, who showed it to me. The following is a translation thereof: "It attacks people in

B

"different

“ different ways. Some are slightly indis-
 “ posed, complaining for several days of a
 “ headach, sometimes very violent, at other
 “ times less so, and now and then ceasing al-
 “ together, and then coming on again. The
 “ patients are affected with pains in the
 “ chest, and particularly in the neck; they
 “ gradually become languid and dejected,
 “ with something like intoxication and drow-
 “ ziness. They have a particular taste in
 “ their mouths, which soon turns to a bit-
 “ ter; at the same time they have an ardor
 “ urinæ. To these succeed chilly and hot
 “ fits, and, lastly, all the symptoms which
 “ characterize the plague. The disease some-
 “ times terminates favourably by perspira-
 “ tion, before the appearance of exanthe-
 “ mata, buboes, or carbuncles. The con-
 “ tagion is sometimes more rapid and more
 “ violent in its action; in that case the in-
 “ fected are suddenly seized after making a
 “ hearty meal, after a fit of anger, or too
 “ much bodily motion, with head-ach, nau-
 “ sea, and vomiting; the eyes become in-
 “ flamed and watery (*larmoyans*), and pains
 “ are

“ are felt in those parts of the body where
 “ buboes and carbuncles are about to appear.
 “ There is no great degree of heat. The
 “ pulse is sometimes full and hard ; some-
 “ times small, soft, and scarcely perceptible ;
 “ it often intermits, and, what should be
 “ particularly noticed, it is often feeble.
 “ These symptoms are accompanied with
 “ lassitude, a white tongue, dry skin, urine
 “ of a pale yellow colour, or turbid, but
 “ without sediment ; frequently with a diar-
 “ rhœa, which it is difficult to stop ; and,
 “ lastly, with delirium, buboes, carbuncles,
 “ and petechiæ *.”

The following summer this disorder spread
 into Poland, and committed great havoc
 there ; from thence it passed to Kiow, where
 it destroyed four thousand souls. Imme-
 diately on its appearance at the last-men-
 tioned place, all communication between that
 town and Moscow was cut off ; guards were
 stationed on all the great roads, and all tra-

* See Addenda, Note A.

vellers were ordered to perform quarantine for several weeks.

At the end of November 1770, the anatomical dissector, at the military-hospital in Moscow, is attacked with a putrid petechial fever, which carries him off in three days. The attendants upon the sick * of this hospital dwelt with their families in two rooms separate from the wards. In one of these rooms they fall ill one after the other, till, at length, all of them, to the number of eleven, are seized with a putrid fever, accompanied with petechiæ; buboes and carbuncles appear in some of them; and most of them die between the third and fifth day. The attendants occupying the other room are seized in like manner with the same disorder.

On the 22d of December, we are required to meet at the Board of Health. The first

* In military hospitals men perform the office of nurses. Tr.

physician to the military-hospital states the circumstances, which I have just related, the truth of which is confirmed by the evidence of three other physicians, who farther report, that fifteen among the attendants, including their wives and children, had fallen victims to this disorder since the end of November ; that five still continued ill of it ; but that it had not yet shown itself in any of the hospital-wards. Eleven physicians were present at this consultation, and we all agreed that the disorder under consideration was the plague, except Dr. *Rinder*, state-physician *, who had visited the sick, several times, in company with Mr. *Schafonsky*, and who pronounced it to be merely a putrid fever ; an opinion which he maintained both in conversation and by writing.

This hospital stands out of the town, near the suburb inhabited by the Germans, from which it is separated by a small stream, called

* Literally physician to the city. The Russian government appoints a physician to every principal town of the empire.

the Yausa. We advised that it should be immediately shut up, and that guards should be placed round it, in order to cut off all communication ; that all the attendants upon the hospital-invalids should be removed, together with their wives and children, to a detached situation, care being taken to separate the infected from the healthy ; and, lastly, that all the clothes and furniture, not only of those who were dead, but likewise of those who still survived, should be burnt.

The cold had set in later this year than usual ; the weather was very damp and rainy until the end of December, when a hard frost came on, and continued through the remainder of the winter.

In addition to our joint report, *Field-Marshal Count Soltikoff*, governour-general of the place, consulted me in private, and desired to know what steps I thought adviseable under the present circumstances. On a subject pregnant with so much danger to the public at large, I did not hesitate to communicate

nicate my sentiments in the most unreserved manner. Accordingly I put into the governor's hands a paper, wherein I laid great stress upon the necessity of employing every possible precaution with regard to the hospital, where I affirmed, that the plague had appeared among the attendants, as before mentioned ; I added, that it would be necessary to make strict enquiries to ascertain, whether the contagion was concealed in any part of the town, and that, wherever it should be discovered, the same precautions, as in the case of the hospital, should be adopted : that, for the same purpose, it would be further necessary to desire the physicians and surgeons, whenever they should perceive any unusual or doubtful symptoms in their patients, to give immediate notice thereof to the Board of Health ; and to order the police-officers to appoint a consultation of physicians, whenever several persons should fall ill in the same house. I remarked, however, that there would be great difficulties in the business, if the contagion existed in other parts of the town besides

the hospital ; but, I added, that, even in this case, we might hope to eradicate the evil when the frost should set in, provided speedy and proper measures were resorted to.

We wished that what had passed on this subject should not transpire ; but the rumour of the plague having broke out at Kiow, some months before, had produced such an effect upon the minds of the public, that the precautions which were adopted, with regard to the military-hospital, threw the whole city into the greatest alarm. All attempts to dissipate the fears of the inhabitants were fruitless.

After some days, however, when it was known that only seven persons in the hospital itself were ill of the disorder, and that the rest remained free from infection, the public fell into the opposite extreme, and thinking themselves in perfect security, the grandees, nobles, merchants, common people, in a word, all the inhabitants, except the governour and a few others, ceased to give them-

themselves any further trouble about the means of prevention.

This idea of security, which was countenanced by the before-mentioned state-physician, Dr. *Rinder*, continued until the month of March. The medical consultations ceased. In spite of all our efforts to the contrary, every kind of precaution was neglected in the city; it was only at the military-hospital that, by order of the Empress, the means of prevention were still observed; in consequence whereof the plague was entirely suppressed there, after twenty-four persons had been seized with it, only two of whom recovered *. Six weeks after the death of the last of them, all their clothes, beds, &c. together with the house, to which they had been removed, and which was built of wood, were burnt. The hospital was opened again at the end of February.

* *Orræus* states, that of the whole number, which consisted of thirty, twenty-two died, five recovered, and three escaped infection. *Descriptio Pestis*, p. 26. Translator.

The generality of mankind judge of things by events only ; and will never believe that the plague is among them, until they have certain proof thereof in the number of funerals *. It is owing to this and other mistaken notions, that the plague is not put a stop to in the beginning ; at which period it may be compared to a spark which might easily be extinguished, but which, if left to itself, bursts out into a conflagration which nothing can resist.

The opinion which went to assure the inhabitants that they were safe from the plague, was very generally believed, as in such cases almost always happens †. It only remained

* We have omitted a sentence or two in this paragraph which threw no light on the subject, and might have appeared exceptionable to some readers. Tr.

† The author relates in a note, which it did not appear necessary to translate entire, that he found himself in a very disagreeable situation, in consequence of having been one of the first to assert the existence of the plague. The language used by some rival practitioners on this occasion, tended (as he believes) to stir up the populace to attack his house in the manner hereafter mentioned.

for

for us to console ourselves with the consciousness of having discharged our duty faithfully, and to the best of our abilities. Would to God that the business had stopped here, and that what afterwards took place had not confirmed the truth of our assertions. We should not then have beheld the dreadful destruction of so many of our fellow-creatures, nor have witnessed the most horrid of all public calamities.

On the 11th of March we are again convened at the Board of Health. In the centre of the town there was a large building used for manufacturing clothing for the army ; three thousand persons were employed in it, nearly a third part of whom, of the most necessitous class, occupied the ground-floors ; the rest, after working there the whole day, returned in the evening to their respective homes, in different parts of the town. Dr. *Yagelsky*, at that time second physician to the Military Hospital, whom the Governor-General had sent to the manufactory in the morning, brings word that he had found several patients,

patients, (eight to the best of my recollection) labouring under the same disorder, (accompanied with petechiæ, vibices, carbuncles, and buboes) which he had seen three months before at the military hospital; and that on seven dead bodies which he had examined, he had perceived similar appearances. On enquiring of the workmen in the manufactory, in what manner, and how long this disorder had made its appearance among them, he was told that a woman who had a swelling in her cheek, had betaken herself to one of her relations who lived in the manufactory, and had died there; and that, from that time, one or other of them was every day taken ill of the disorder. They further stated, that from the period above-mentioned to the present day, they had lost one hundred and seventeen persons, including the seven dead bodies not yet interred. This account given by Dr. *Yagelsky*, was corroborated by two other physicians, who had been sent the same day to examine the patients and dead bodies.

In a Memoir addressed to the Governor-General and the Senate (by whom we had been called together) we renew our declarations, that this disorder is the plague *; and we advise them to remove out of the town all the persons dwelling in the manufactory, taking care to separate the sick from the healthy; that they should order the clothes and furniture of the dead and infected to be burnt; and that the strictest search should be made to find out whether the contagion existed in any other part of the city. The inhabitants are again seized with a panic; and they now too well perceive the consequences of their neglect of the precautions recommended. We were thirteen physicians at this meeting †, two of whom, who three months before had agreed with us that the disease which broke out at the military hos-

* See *Gustavi Orræi Descriptio Pestis*. 4to. Petropoli, 1784, p. 29.

† The state physician, Dr. *Rinder*, was attacked at the end of February with a gangrenous ulcer in the leg, which prevented his attendance at this meeting:—He died soon after.

pital was the plague, now said that the present disorder was not the plague, but a putrid fever; an opinion which they enforced in a separate conference with the Senate. These two physicians (Drs. *Kublmann* and *Schiadan*) who still differed from us in opinion, had been led into their error, by observing that the number of deaths in the town was not greater than usual, but rather less than in the preceding years, and that there were very few people ill.

Some days after, being summoned to meet the other physicians and surgeons at the senate, where each of us was required to deliver our sentiments explicitly, I affirmed, in the most solemn manner, that I was thoroughly convinced that the disease under consideration was the plague; ten of my colleagues were of the same opinion, and the two others before mentioned still maintained the contrary*; nevertheless, they admitted the propriety of adopting precautions against

* *Orræus*, as before quoted, p. 29.

a disorder, which, though not the plague, was of a contagious nature.

The first day (the 11th of March) is spent in deliberations. The infected building is shut up, and guards are placed there, to prevent any person from going in or coming out. Several make their escape through the windows, and the rest are removed out of the town during the night, the uninfected to the convent of St. Simon, and the infected to the convent of St. Nicholas, one of which is distant six, and the other eight versts*; from Moscow. These convents are surrounded with high walls, and have only one entrance. As it was discovered that some had died among the workmen who lived in their own houses, these were taken to a third convent, situated in like manner out of the town. Orders were given to the surgeons who had the care of all these people, to transmit daily to the Board of Health a list of the sick and dead. A committee of physicians

* Three versts are equal to two English miles. Tr.

was appointed to regulate every thing concerning the treatment of the sick, and the keeping of those who were performing quarantine free from infection ; and great attention was paid to the interment of the dead. Drs. *Erasmus* and *Yagelsky* (now no more !) were entitled to great praise for the manner in which they acquitted themselves in this business. When any one of those who were under quarantine was taken ill, he was put in a separate room, and kept there until the symptoms of the plague shewed themselves, when he was conveyed in a carriage, by persons hired for that purpose, to the pest-house, viz. the convent of St. Nicholas.

The public baths, where the people are accustomed to go, at least once a week, were shut up. The town was divided into seven districts, to each of which one physician and two surgeons were appointed, for the purpose of examining all the sick as well as the dead bodies ; in which business police-officers were joined with them. It was forbidden to bury the dead within the city ; pro-
per

per places for burying-grounds were fixed upon at some distance from the town. It was ordered, that whenever any one of the common people should be seized with the plague, he should be sent to the hospital of St. Nicholas, and that, after burning his clothes and furniture, those who had been living in the same apartment should be detained for the space of forty days in some buildings appropriated to that purpose out of the town; that if the like occurrence should happen in the house of a principal inhabitant or person of rank, all the servants who had been in the same room with the patient should perform quarantine, and that the master, together with all his family, should remain shut up in his own house for the space of eleven days. All this was sanctioned and passed into the form of a law by a resolution of the Senate. General *Peter Demitrewich de Yeropkin*, not more distinguished by his birth and valour than by his polished manners and humane disposition, was appointed by the Empress, Director-General of Health.

Notwithstanding what had happened, the number of those who were convinced that the plague had reached Moscow, was as yet inconsiderable. Dr. *Orræus*, physician to the army, who had visited impested patients at Jassy, was now passing through Moscow in his way to Petersburg, and was requested to examine the sick and dead bodies before mentioned, which he accordingly did, and declared, that the disorder was exactly like that which, a short time before, had proved so destructive in Moldavia and Wallachia; that it was, in fact, the plague. This was further confirmed by Dr. *Lærch*, who was just returned from Kiow, where he had remained during the time that the plague raged there.

The weather continued very cold until the middle of April, in consequence of which the contagion became more fixed and inactive, attacking only those who dwelt with the infected. In the pest-house, the daily number of deaths did not exceed three or four; and of the manufacturers who were performing

5

quarantine

quarantine only about the same number fell ill.

According to the reports of the physicians, surgeons, and police-officers, the town appeared to be healthy. Almost every body believed that the physicians who had called the disorder the plague, had imposed upon the public ; others entertained doubts on the subject. Things went on in this way until the middle of June, during which time nearly two hundred persons had died at the hospital of St. Nicholas. The number of sick and dead diminished daily there, in so much that, for a whole week, although the weather was very warm, not one fell ill of the disorder, and there only remained in the hospital a few convalescents. No further vestige of the disorder could be traced in the town.

As among the workmen of the manufactory, who had been removed from their own houses to a third convent at a distance from the other two, in order to perform quaran-

time, not one had been attacked with the disorder for the space of two months, they were allowed to return to their respective homes.

We now began to flatter ourselves that the plague had been entirely eradicated by the precautions which had been adopted. Scarcely, however, had we indulged in these fond hopes, when, towards the end of June, some people are taken ill of the same disorder at the hospital of St. Simon, where the quarantine was performed. On the 2d of July, six people die in one night at a house in the suburb of Preobraginsky; a seventh, who lived with them, absconded*. Livid spots, buboes, and carbuncles are found upon the dead bodies. On the following days, many of the common people fall sick in different quarters of the town, and the mor-

* In what manner the contagion got among these people could not be ascertained. Perhaps, through the negligence of the centinels, they had some communication with the persons under quarantine; or had become infected by bringing into use clothes and other effects, which the last-mentioned persons might have concealed under ground before their removal to the quarantine-hospital.

ality increases to such a pitch, that the number of deaths, which commonly amounted to about ten or fifteen *per* day, and which, even during the prevalence of putrid fevers (as was the case for the two last years) did not exceed thirty, amounted at the end of July to as many as two hundred in the space of twenty-four hours. The sick, as well as the dead bodies, exhibited large purple spots and vibices; in many there were carbuncles and buboes. Some died suddenly, or in the space of twenty-four hours, before the buboes and carbuncles had time to come out; but the greatest number died on the third or fourth day.

In the middle of August, the number of deaths amounted daily to four hundred; and at the end of the same month to as many as six hundred. At this time buboes and carbuncles were more frequent than they had been in July. At the beginning of September there were seven hundred deaths in the space of twenty-four hours; in a few days, there were eight hundred deaths with-

in the same number of hours; and a short time after, the deaths amounted to one thousand in a day !

The havoc was still greater during the time of the riots, which began on the 15th of September, in the evening; when an outrageous mob broke open the pest-houses and quarantine-hospitals, renewing all the religious ceremonies which it is customary with them to perform at the bed-side of the sick *, and digging up the dead bodies and burying them afresh in the city. Agreeably to their ancient custom, the people began again to embrace the dead, despising all manner of precaution, which they declared to be of no avail, as the public calamity (I repeat their own words) was sent by God, to punish them for having neglected their ancient forms of worship. They further insisted, that as it was pre-ordained who should

* Besides praying by them in the ordinary manner, it is customary, in Russia, to carry in great pomp to the sick the images of their saints, which every person present kisses in rotation.

and who should not die, they must await their destiny; therefore, that all endeavours to avoid the contagion were only a trouble to themselves, and an insult to the Divinity, whose wrath was only to be appeased by their refusing all human assistance *. *General Yeropkin*, with a small party of soldiers drawn together as speedily as possible, dispersed the mob, and restored tranquillity in a few days, after which every thing was placed on its former footing. This vast concourse and intermixture of the healthy and infected, caused the contagion to spread to such a degree, that at this time the daily number of deaths amounted to one thousand two hundred and upwards !

* In their paroxysm of phrensy, the populace attempted to wreak their vengeance upon those who had laboured for their preservation. After they had sacrificed one victim to their blind rage, they sought for the physicians and surgeons. Some of the lowest rabble broke into my house, and destroyed every thing they could lay hold of; they also went in search of the other physicians and surgeons, and pursued such as they met with. Providence rescued us all from their hands. Little suspecting what was to happen, I had gone four days before, by order of council, to the Foundling-Hospital, to superintend more closely the health of the children there.

Moscow, one of the largest cities in Europe, consists of four circles, or inclosures, one within another; the smallest, which occupies the centre, is called Kremmel, and the second, which surrounds it, Kitaya, (or Chinese-Town); they are both inclosed by brick-walls, and the houses within them are built of brick; the third, which is called Bielogorod (or White-Town) is without walls, they having been levelled with the ground; and, lastly, the fourth called Zemlanoigorod (from Zemla, land or earth, and Gorod, town) is defended by a ditch and rampart of earth*. In the two last-named parts of Moscow the houses are, for the most part, constructed of wood. These houses do not stand close together, but are detached with spaces between, and, in general, only one family inhabits each; hence they rarely consist of more than one

* There is some little variation between this author's spelling of these Russian names and Mr. Coxe's. The last-mentioned traveller writes the 1st. Kremlin; the 2d. Khi-taigorod; the 3d. Bielgorod; and the 4th. Semlainogorod. This last takes its name from the rampart of earth with which it is surrounded. Tr.

story, and often of a ground-floor only. The nobles keep a great number of servants; and the common people live crowded together in small wooden houses *.

In winter time the nobles repair to Moscow, from all parts of the empire, bringing with them a large train of attendants. Great numbers of the common people, who were engaged during the summer in agricultural labour, return to this great city in the winter, to gain subsistence by different employments. This conflux of people makes the town so full, from the month of December to March, that the population, at this season, amounts, according to some computations, to two hundred and fifty thousand; according to others, to three hundred thousand. In the month of March, people begin to go into the country again; hence, during the summer,

* Mr. *Coxe* describes the wooden houses of the common people in Moscow, as mean hovels, in no degree superior to peasants cottages. It is easy to conceive how favourable these low and crowded habitations must have been to the harbouring and spreading of contagion. Tr.

the number of inhabitants is, at least, one-fourth less than in winter. In 1771 the fear of catching the plague had caused a much greater number to leave the city; so that I do not think that, in the month of August, there were more than one hundred and fifty thousand remaining in the place. An idea may be formed of the destructive nature of this disorder, and the terrible activity of its poison, by reflecting, that of these one hundred and fifty thousand inhabitants, twelve hundred were daily carried off by it, (in the month of September!) The number of deaths kept at this rate for some days, and then diminished to one thousand. As the populace, during the riots, had re-established all the religious ceremonies customary on burying the dead, almost all their priests, deacons, and other ecclesiastics, fell victims to the contagion.

The people, brought to a sense of their duty, partly by the rigorous measures employed against them, and partly by seeing that the public calamity had been aggravated by

by their disorderly proceedings, now began to implore our assistance. The monasteries and other pest-houses were full; the sick were no longer carried thither; the contagion had spread every where; insomuch that the city itself might be considered as one entire hospital. All, therefore, we could now do, was to exhort every individual to take care of himself; to warn all those who were yet free from the contagion, to avoid, as much as possible, touching with their bare hands any infected person; to direct them to burn the clothes, and every thing else that had been used by those who had been ill of the plague; and, lastly, to keep their rooms clean and well aired.

At this time *Count Gregory Orlov** arrived at Moscow, invested with full powers by the empress. I received an order, in common with the other physicians, to deliver, in writing, my private sentiments on the subject; we were required to turn our attention principally to the most proper measures for

* Now Prince *Orlov*.

destroying the contagion *. Having taken the necessary steps to prevent all further popular commotions, the Count selected, from all our papers, what appeared of most moment, and drew up a set of regulations, as well for the treatment of the sick, as for the keeping of those who were yet well, free from infection. He also ordered new hospitals to be immediately built for the reception of the poor seized with the plague †.

Some months had elapsed since the plague had been carried to many of the villages, as well in the vicinity as at a distance from Moscow. Persons who fled from this city had also carried it with them to Kalomna (Kaluga, according to *Orræus*), Yaroslaw, and Tula. Inspectors of health, attended

* See Addenda, Note B.

† In Russia it is no uncommon thing to have a large edifice built of wood in a few days. See *Coxe's Travels*. To persons unacquainted with this fact, the erecting of new hospitals might seem a very tardy measure for checking the progress of the plague. Tr.

by physicians and surgeons, were sent to these infected towns and villages.

A Council of Health was formed, composed of *General Yeropkin* (who was president), of some counsellors of state, and of three physicians, and one surgeon. This council received daily reports from the physicians and police-officers, and took cognizance of every thing which related to the health of the inhabitants. Two physicians, *Drs. Pogaretsky* and *Meltzer*, being offered a reward of one thousand roubles, undertook, each of them, the care of a pest-hospital; and went thither accordingly.

On the 10th of October the frost set in; from that day the disorder was less fatal, and the contagion became more fixed. The number of sick and dead gradually diminished; and the disorder, which a short time before had terminated on the second or third day, now kept on to the fifth or sixth. Neither those large purple spots, which we have before described, nor carbuncles, were
by

by any means so frequent as they had been ; buboes were now almost the only tumours found upon the infected.

The hard frost * which prevailed during the two last months of the year, weakened the pestilential virus to such a degree, that those who attended the sick and buried the dead were in much less danger of being infected ; and when they were infected, the symptoms were much milder ; so that at this period, several persons who had the plague were but slightly indisposed, and walked about though they had buboes upon them.

At the close of the year 1771, this dreadful scourge ceased, by the blessing of God, at Moscow, and in every other part of the Russian empire. Besides the three towns before-mentioned, upwards of four hundred villages had been infected.

* *Reaumur's* thermometer was constantly in the morning between 16 and 22 degrees below the freezing point.

The weather was intensely cold during the whole of the winter. In order to destroy all remains of the contagion, the doors and windows of the rooms in which there had been any persons ill of the plague, were broken and the rooms were fumigated with the antipestilential powder*; the old wooden houses were entirely demolished. The effects of the plague were traced in every part of the city. Even as late as the month of February, 1772, upwards of four hundred dead bodies were discovered, which had been secretly buried the year before in private houses. So powerful is cold in destroying the contagion, that not one of those who were employed in digging up these bodies, and carrying them to the public burying-grounds, became infected†.

* See Addenda, note C.

† Dr. *Pogaretsky*, who had the care of the pest-hospital, *Laforte*, told me that some of the bearers of the dead had put on sheep-skins that had been worn by the impested, after having exposed them to the open air for forty-eight hours, in the month of December, when the frost was very intense; and that none of them became infected.

The total number of persons carried off by the plague amounted, according to the reports transmitted to the Senate and Council of Health, to upwards of seventy thousand; more than twenty-two thousand of this number of deaths happened in the month of September alone *. If we add to these, the private and clandestine interments †, the whole number of deaths in Moscow will amount to eighty thousand ‡: and reckoning those who died

* The author remarks in a note, that the number of deaths in the month of September, probably amounted to as many as twenty-seven thousand. At this time, which was during the riots, the number of deaths could not be accurately registered.

† The number of these was by no means inconsiderable; for during the height of the plague, there was scarcely a sufficient number of men, horses, and carts to carry off the dead; many remained uninterred for two or three days, and were at length taken away by their relations, friends, or poor people hired for that purpose. Many of these could not be registered, besides numbers of others who were buried in secret, and whose illness was never reported to the Senate.

‡ According to the returns made to the Council of Health, and published by *Orræus* (*Descriptio Pestis*, p. 48,) the number of persons carried off by the plague at Moscow

died in upwards of four hundred villages, and in the three towns of Tula, Yaroslaw and Kalomna (or Kaluga) *, it will follow that this plague swept off altogether as many as an hundred thousand persons !

For carrying away and burying the dead, criminals capitally convicted or condemned to hard labour, were at first employed ; but afterwards, when these were not sufficient for the purpose, the poor were hired to per-

cow in the year 1771, did not amount to more than fifty-six thousand seven hundred and seventy-two. It is to be remarked, however, that this list of deaths is dated only from the month of April, whereas the plague broke out in the cloth-manufactory in the beginning of March. Indeed, *Orræus* himself acknowledges, (p. 49,) that a much greater number than what appears from the reports laid before the Council must have died of the plague, as, on pulling down the houses in different parts of the city, so many dead bodies were found that had been secretly interred, and as, moreover, in the beginning of the disorder, the returns were very inaccurately made. Tr.

* These towns did not suffer greatly from the plague, as the inhabitants took warning from the unhappy fate of Moscow, and attended to the necessary precautions from the beginning. It was more destructive in the villages, and particularly in those that were at the greatest distance from Moscow.

form this service. Each was provided with a cloke, gloves, and a mask made of oiled cloth ; and they were cautioned never to touch a dead body with their bare hands. But they would not attend to these precautions, believing it to be impossible to be hurt by merely touching the bodies or clothes of the dead, and attributing the effects of the contagion to an inevitable destiny. We lost thousands of these people, who seldom remained well beyond a week. I was informed by the Inspectors of Health, that most of them fell ill about the fourth or fifth day.

The plague, as is generally the case, raged chiefly among the common people ; the nobles and better sort of inhabitants escaped the contagion, a few only excepted, who fell victims to their rashness and negligence. The contagion was communicated solely by contact of the sick or infected goods ; it was not propagated by the atmosphere, which appeared in no respect vitiated during the whole of the time. When we visited any
of

of the sick we* went so near them that frequently there was not more than a foot's distance between them and us ; and although we used no other precaution but that of not touching their bodies, clothes, or beds, we escaped infection. When I looked at a patient's tongue, I used to hold before my mouth and nose a pocket-handkerchief moistened with vinegar†.

Amid so great a number of deaths, I think there were only three persons of family, a

* I mean those physicians who, with myself, remained in the town ; but not such as had the care of the pest-hospitals.

† Although the atmosphere may not be capable of communicating the pestilential contagion beyond a very limited distance from its source, yet to approach so near as within a foot of the infected, appears to us (notwithstanding the present instance to the contrary) to be a practice not generally safe. Dr. *Russel* proceeded with more caution in his examinations of the infected at Aleppo. He prescribed to most of his patients out of a window, about fifteen feet above them. A stair passed near one of the windows, by which he had such of the infected, whose eruptions he wanted to examine, brought within a smaller distance, viz. within four or five feet. *Russell*, on the Plague, book I. ch. vi. Tr.

few of the principal citizens, and not more than three hundred foreigners of the common class, who fell victims to the plague; the rest consisted of the lowest order of the Russian inhabitants. The former only purchased what was absolutely necessary for their support, during the time of the pestilence; whereas the latter bought up every thing which was rescued from the flames, and which of course was sold at a very low price; they refused to burn the goods which came to them by inheritance; and, moreover, carried away many things clandestinely, in spite of all we could say or do to the contrary.

Two surgeons died of the plague in the town; and a great number of surgeons-mates and pupils in the hospitals. Dr. *Pogaretzky* and Mr. *Samoilowitz*, first surgeon to the hospital of St. Nicholas, both caught the infection several times; and were cured by critical sweats coming on at the beginning of each attack of the disorder.

The foundling hospital, which contained about a thousand children* and four hundred adults (including nurses, servants, masters, and workmen) was kept free from infection by the precautions hereafter mentioned †. Only four workmen, and as many soldiers, who had got over the fences in the night time, were seized at different times; but by immediately separating them from the rest of the house, the disorder was prevented from spreading any farther. Thus this building was kept free from the plague, at the time that it raged in all the other houses around it; a proof that the atmosphere, not only during the frost, but even during the great heat of the summer ‡, did not serve
as

* Almost all the youngest children were out at nurse in the country.

(Mr. *Coxe* relates, that, at the time he was at Moscow, this noble institution contained three thousand foundlings. Tr.)

† See Addenda, D.

‡ It is remarkable, that it is towards the summer-solstice, according to *Russel* (Natural History of Aleppo)

as a vehicle for spreading the contagion, which was only propagated by contact of the sick or infected goods *.

The young and robust were more liable to become infected than elderly and infirm persons; pregnant women and nurses were not secure from its attacks. Children under

and *Prosper Alpinus* (*Medicina Ægyptiorum*) that the plague generally ceases in Asia and Africa; whilst in Europe it rages with the greatest fury at that season, and is only subdued by the winter-cold.

* From the author's expressions in this place, the reader might be led to believe that he meant to restrict the communication of infection to contact of the sick and infected goods; but in other parts of his book, he admits the possibility of the contagion being communicated by the breath and other effluvia from the sick. Indeed there can be no doubt that the pestilential particles are (especially in the worst forms of the disease) contained in the moisture perspired through the skin, and in the vapour emitted from the lungs. If not, where was the use of the precaution, which the author adopted in his own person, of holding a handkerchief moistened with vinegar before the mouth and nose on approaching the sick? The conclusion, from all this is, that the sphere of contagion in cases of the plague, extends to a greater distance (several feet at least) than *Dr. Mertens* imagines. Tr.

four years of age were much less readily infected, but when they were, they exhibited the worst symptoms.

All who were attacked with the plague had more or less fever; though in some it was so slight as to be scarcely perceivable. In a few instances, the patients were seized, from the first, with a furious delirium, accompanied with a high degree of fever; but the greater part were affected with debility, and only complained of oppression about the præcordia, and head-ach*.

After taking great pains to ascertain in what manner the plague was introduced into the military hospital, the physician to that institution at length found out that two soldiers had died there in the month of November, 1770, a short time after their arrival from Choczim, where the plague was then raging; and that a Colonel, in whose train

* For a more particular account of the symptoms, see Addenda, A.

they were, had died upon the road. It would seem that the anatomical diffector opened the bodies of these soldiers ; and that he caught the plague of them. The persons who waited upon the sick, either became infected by touching the bodies of these soldiers whilst they were living ; or by handling their clothes, or their bodies after death. These attendants afterwards spread the contagion among their families.

Thus have we traced the history of the plague which depopulated Moscow in the year 1771, from its first appearance to its final extinction. A plain and faithful statement of facts, even at the risk of being tedious, is what has been aimed at in this narrative ; for let it be observed, that it is from simple details of the origin and progress of the plague, as it appears in different places, and of the symptoms and other circumstances with which it is accompanied, and not from the laboured dissertations that have been written upon it by some voluminous

nous authors, that we can hope to acquire an accurate knowledge of the nature of this disorder, to ascertain the manner in which its contagion is propagated, and lastly to discover the best methods of prevention and cure.

ADDENDA.

A D D E N D A.

A.

Symptoms more particularly described.

THE symptoms of the plague vary according to the different constitutions of the persons whom it attacks, and the season of the year in which it appears. Sometimes it wears the mask of other diseases; but in general it is ushered in by head-ach, stupor, resembling intoxication, shiverings, depression of spirits, and loss of strength; these are followed by some degree of fever, together with nausea and vomiting. The eyes become red, the countenance melancholy, and the tongue white and foul. In this state of things, the patients are sometimes capable of sitting up, and going about for some hours, or even a day or two. They feel an itching or pain in those parts of the
body

body where buboes and carbuncles are about to appear. During the height of the plague, many of the infected die on the second or third day, before these tumours have time to come out, and with no other external marks except petechiæ or purple spots, which appear a short time before death; in some these spots are altogether wanting. The buboes and carbuncles generally come out on the second or third day, seldom on the fourth.

In some instances, the plague appears under the form of an inflammatory disorder, being accompanied with great heat, thirst, high-coloured urine, flushed cheeks, and violent delirium or phrensy; but in the greater number of cases it assumes the type of a nervous fever, being accompanied with little heat and thirst, and pale and turbid urine; the patients think themselves only slightly indisposed, until a sudden prostration of strength, and the eruption of buboes, carbuncles, petechiæ or vibices, announce to themselves, as well as to those who are about them, the danger they are in. In some few instances,

instances, the plague appears under the form of an intermittent fever.—Almost all those who are carried off by this disorder, die before the sixth day; those who get over the seventh day have a good chance of recovery *.

The diversity of symptoms above-noticed, has given rise to the opinion that there are three different species of the plague, viz. one which is accompanied with petechiæ, another with carbuncles, and a third with buboes; but the history which we have given, clearly proves, that these are only shades or modifications of one and the same disorder, which is more or less violent under different circumstances and at different seasons. Petechiæ, buboes, and carbuncles often appear at the same time in the same patient, or oc-

* The author did not venture to feel the pulse of those impestred patients who were under his own care, lest he should take infection. As the observations communicated to him by others on this head, which he has inserted in his book, coincide with those of *Orræus* and *Samoïlowitz*, which we shall afterwards notice, we have omitted them, to avoid repetition. Tr.

cur in succeſſion. In the month of July, great numbers of the impeſted died before the tumours came out, having petechiæ only ; whereas in Auguſt and September, almoſt every patient had petechiæ, joined with buboes and carbuncles. After the middle of October, when the contagion was leſs virulent, although it ſtill produced petechiæ and carbuncles, yet they were neither ſo malignant nor ſo frequent. Before this period, ſcarcely four patients in a hundred recovered ; whereas during the latter months of the year, the proportion of recoveries was much greater. *Sydenham* has made the ſame obſervation reſpecting the plague at London*. Nature endeavours to throw off the poiſon by buboes. Carbuncles and petechiæ are not

* It will be ſufficient for readers in this country to refer to *Sydenham's* works, Sect. II. Cap. II. without tranſcribing the quotation which the author has introduced in this place. *Sydenham* obſerves of the London plague (1665), that it was moſt ſuddenly mortal in the beginning ; whereas the Ruſſian plague was the moſt rapid in its action when it was at its height. Dr. *Mertens* reconciles this contrariety of obſervation, by remarking that the London plague began in the ſummer, a ſeaſon the moſt favourable for its activity. Tr.

critical eruptions ; they only denote a putrid condition of the humours, and a great degree of acrimony ; whence it follows, that in proportion as buboes are more common, and petechiæ and carbuncles more rare, the milder the plague is *.

To this account which Dr. *Mertens* has given of the symptoms which the plague at Moscow exhibited, we shall add the descriptions drawn up by two other practitioners (*Orræus* and *Samoïlowitz*,) who had great opportunities of observation, and who have been more particular in noticing some of the phenomena than our author.

According to *Orræus* (*Descriptio Pestis, &c.*) the plague in Russia appeared under four different forms or varieties. Of these, he terms the first, *the period of infection*;

* The description and treatment of the buboes, carbuncles, and other eruptions, which are to be found in every treatise on the Plague, the translator has purposely omitted, that the pamphlet might not be swelled out to an unnecessary bulk.

the second, *the slow type* ; the third, *the acute type* ; and the fourth, *the exceedingly acute type*.

1. In *the period of infection* (which is commonly the forerunner of the other forms of the plague) the contagion, less active and virulent, keeps lurking in the body, and produces the following symptoms, viz. sharp, flying pains in the glandular parts (such as the armpit and groins) and in the muscles of the neck and breast ; ardor urinæ ; drowsiness ; an increased secretion of the sebaceous humour, so that the skin is in many parts, and more especially in the hands and face, much more unctuous and glossy than usual ; the belly is costive, but when moved, there comes away a great quantity of pulpy slimy fæces ; the patients complain of a heaviness of the body (some compare their limbs to a mass of lead), great lassitude and faintings. A swelling, but without much pain, of some gland (in the groin or armpit) together with dark-red or brown spots, denote a
higher

higher degree of infection : and a bad taste in the mouth, a viscidness of the saliva, loss of appetite, whiteness and foulness of the tongue, and head-ach, show that the patient is going to be attacked with the plague under one or other of the following types. The above-mentioned symptoms, which continue for a longer or shorter time (in some instances for several days or even weeks) are not accompanied with fever.

2. After the period of infection above described has continued for some time without yielding to medicine, it generally ends in *the slow type of the plague*, which is characterized by the following symptoms ; viz. shiverings, followed by a moderate degree of heat (A), a febrile (B), unequal, for the most part weak, and often intermitting pulse ; a constant dull

(A) Frequently in the progress of the disease there is no heat on the surface of the body ; but the burning heat under the axillæ shows that the internal heat is very intense.

(B) A febrile, but not very quick pulse ; sometimes almost natural.

pain

pain in the head (rather, according to the expression of some patients, a heaviness, as if the head was full of lead); urine pale and turbid, but without sediment; tongue foul and moist; very little thirst; depression of spirits; belly costive during the first three or four days, with inflation of the hypochondria and borborygmi, but the abdomen feels soft on pressure; there is frequent nausea and vomiting of a slimy greenish-yellow saburra (c); petechiæ and other eruptions (d) make their appearance, in some sooner in others

(c) The saburra brought up by vomiting, is commonly of a dirty yellow colour, viscid, and sometimes frothy. The quantity thrown up is astonishingly great, much greater than is observed in any other fever.

(d) The petechiæ and other eruptions vary in size and colour. They are mostly small and distinct, but sometimes run together and form broad maculæ, which now and then end in carbuncles. Their colour in many instances is livid or black, in others (when the disease is milder) purplish, in some reddish. In convalescents, they turn first red, then yellow, and afterwards disappear. They are so common in the beginning of the plague, that scarcely any one dies without them; though buboes and carbuncles are not observable. Hence those who have never seen the plague under all its forms are apt to be deceived respecting the nature of the disorder.

later ; but in some they are altogether wanting. The rudiments or germs of buboes and carbuncles, which were forming during the period of infection, now gradually increase in size, but without being accompanied with violent pain ; and new ones arise in other places ; which, if they suppurate on the fifth, sixth, or seventh day, save the life of the patient : on the other hand, if no suppuration takes place, and great debility, diarrhœa, and delirium come on, the disease terminates fatally, not, however, in some cases till after the fourteenth day.

3. In *the acute type*, the plague is preceded by a much shorter indisposition, sometimes by none at all, suddenly seizing persons in health. It is characterized by the following symptoms : a bitter taste in the mouth, and a viscidness of the saliva ; violent head-ach (E) ;

(E) The patients complain of this more than of any other symptom. The pain begins in the frontal sinus, and the orbits of the eyes, and afterwards extends to the temples and sides of the head as far as to the back part, and gradually over the whole head ; so, however, as to be most violent in the fore part.

redness of the eyes (F) and face ; a very foul, and sometimes dry tongue ; chilliness succeeded by considerable heat ; a much fuller, stronger, and quicker pulse than in the slow type of the disorder, as well as more thirst, and deeper coloured urine ; costiveness ; buboes, and carbuncles come out soon after the attack of fever, or at the same time with it ; after these, others come out ; frequent vomitings supervene, and a delirium, which is generally of the low kind (G). If, between the first
and

(F) The appearance of the eyes in the plague is such as, when once seen, will ever afterwards enable even the commonest observers to recognise the disease. The eyes are unusually prominent, and the vessels of the tunica albuginea are turgid with blood, so as to produce a præternatural redness. They are, moreover, watery, sometimes full of tears (*lacrymantes*), and have a sparkling fierceness. But in the advanced stage of the disease, when the powers of life become exhausted, the eyes sink in, the redness gradually goes off, and a little while before death they become dull, and appear as if they had a film over them.

(G) Although the delirium is rather higher than it is in the slow type of the plague, yet it is very rarely of the furious kind, in the present type of the disease. The patients are affected with stupor, and lie motionless in a

and fourth day of the attack, the buboes are resolved (H), or they, as well as the carbuncles, come to suppuration, the patient recovers: on the other hand, if no suppuration takes place within that period; if the buboes and carbuncles increase to a great size, and the delirium continues, then the powers of life become exhausted, the pulse sinks, and death is ushered in by hæmorrhages, and a copious exspuition of thin phlegm (I).

Death

dozing state; or if they awake, they are perpetually stretching out their hands and trying to raise themselves up, as if they wanted to get out of bed. They talk incessantly, but in consequence of the turgid and swollen state of the tongue, their speech is broken and fluttering, like that of drunken people, so as to be scarcely intelligible.

(H) The buboes are dispersed or resolved by critical sweats breaking out on the first day of the attack. Often, at the same time, there is a discharge from the urethra of a white, viscid fluid, resembling pus, similar to what happens in a gleet; but this running is not accompanied with pain, and ceases spontaneously after a few days.

(I) A moderate bleeding from the nose in the beginning of the disease, was, especially in plethoric habits, sometimes salutary; but in most instances it was otherwise.

Death takes place on the third, fourth, or fifth day ; and it often happens, while the corpse is yet warm, that petechiæ and other spots come out. The bodies, after death, appear remarkably pale, soft, somewhat tumid, flexible, and free from fætor.

4. The plague, *in its most acute type*, attacks in various ways ; but in relation to the leading symptoms, it may be reduced to two forms : in the first, a person in perfect health, without any previous marks of infection, is suddenly seized with a short but violent shivering fit, followed by a hot fit, which al-

wise. Such as spat up frothy blood, mixed with a great quantity of thin phlegm, though they might not at the time exhibit symptoms of great debility, or appear to be in danger, did, nevertheless, contrary to expectation, die soon afterwards. Hæmorrhages happened more frequently, and proved more fatal to women than to men. An immoderate flow of the menses coming on suddenly and before the stated time, carried off the patient in many instances. When pregnant women were attacked with this type of the plague, they almost always miscarried, and lost their lives by the subsequent hæmorrhage. This was also very generally the case with those who were delivered after having gone their natural time.

ternate with each other several times; but the external heat soon goes off, and the skin feels cool. The pulse is hard and very quick, with a most violent head-ach and intolerable anxiety about the præcordia (κ); a furious delirium generally comes on; the tongue is smooth, exceedingly dry, and after a while becomes livid; the respiration is short and laborious; the eyes, which are more prominent than in the acute plague, are very red and full of ferocity; the face and neck are turgid, at first red and afterwards livid; vomiting seldom comes on spontane-

(κ) This anxiety about the præcordia may be regarded as a pathognomonic symptom of the plague in its most acute type. It is so excessive that the patients are at a loss for words capable of expressing it. It does not consist in a violent pain, but in a certain oppressive, suffocating, and altogether intolerable sensation at the pit of the stomach. In this state, they make known their anguish and show the danger they are in by sighs, tears, and lamentations, writhing their bodies in the most violent manner, and, especially when their delirium comes on, falling down upon the ground or floor, and crawling about as long as any muscular power remains. Others who are affected with extreme debility from the first, although they feel the same anguish, are not capable of tossing and writhing themselves about so much,

ously.

ously. Such as are seized with these violent symptoms seldom live more than twenty-four hours. Most of them die apoplectic, or in a state of convulsive suffocation (L); some, however, expire in a more placid manner. After death the bodies turn livid in those parts where nature had endeavoured to throw out buboes; and dark-coloured spots and vibices appear in different places. In the other mode of attack, the patients are affected with debility from the beginning, which, together with the *anxietas præcordiorum*, increases every moment; so that unless timely relief be given, death speedily comes on. In these cases, the pulse is very quick, but small, feeble, and at length imperceptible. Sometimes there is a low delirium; but in many instances the patients are sensible to the last. These are all the febrile symptoms that are observable. Rudiments or germs of buboes are seen upon the dead bodies.

(L) In the same manner as those who die of the *catarrhus suffocativus*.

Of these two varieties of the plague in its most acute form, the first was observed to take place in persons of a robust constitution and in full health, after making too hearty a meal on food not easily digested, or eating too much fruit, &c. The other variety attacked those who were under the influence of terror, or after immoderate venery, bleeding, &c.

The very acute type of the plague is less frequent than the other types, and often destroys the patient before medical assistance is called in ; in so much that he who appeared well yesterday, is to day carried to his grave. In this species of the plague, I never saw perfect carbuncles and exanthemata ; but buboes come out quickly after the attack, and are seen considerably elevated and livid in the dead bodies.

Such is the description of symptoms given by *Orræus*, a diligent and accurate observer. That published by *Samoïlowitz* *,

* *Memoire sur la Peste, qui en 1771, ravagea l'Empire de Russie, sur tout Moscou, &c. par M. D. Samoïlowitz. A Paris, 1783.*

although

although it is not so circumstantial nor so well digested, coincides in all essential points with the above. This last author considers the plague under three different aspects or varieties, which correspond to the *three periods of its beginning, its height, and its decline*. In the first and last period, carbuncles and confluent petechiæ, or broad maculæ, are very rarely met with; whereas in the middle period, when the disorder rages with the greatest fury, they both occur in one and the same subject, and denote the utmost danger. At this period, (viz. when the plague is at its height) the pestilential particles being more virulent, more volatile, and more subtle, enter the body more readily, act upon it with greater force, and produce a disease which runs its course with greater rapidity than in either of the other two degrees or varieties of the plague.

The symptoms in *the first period of the plague* are few and moderate; they are for the most part reducible to head-ache, vomiting,

ing,

ing, and buboes ; petechiæ rarely appear *, or if they do, they are distinct and very small ; carbuncles are hardly ever seen. This degree of the plague terminates favourably by a suppuration of the buboes, often without any assistance from art. It may therefore be termed the mild or benignant form of the plague.

The *next degree or variety* is that which occurs when the plague is at its height. This is the most terrible form of the disorder. All the symptoms are marked with violence. The head-ache is incessant, and the vomiting recurs frequently ; the external characters are numerous ; carbuncles appear in various parts of the body ; the petechiæ or maculæ are very large and confluent, and often turn to carbuncles a short time before death. This happens in the following manner : two,

* This remark respecting the rare occurrence of petechiæ in the beginning of the plague is contrary to the observations of *Mertens* and *Orræus*. Mr. *Samoilowitz* did not see much of the plague at Moscow in the beginning ; he was chiefly employed in the care of the pest-hospitals during the height of the disorder. Tr.

three, or four large petechiæ run together and form a yellow pustule; sometimes a similar pustule rises upon each petechia; in either case, on opening the pustules, a true carbuncle appears beneath. In some instances the patient is seized from the first with a furious delirium; at other times this delirium or phrenitic state does not supervene until the second, third, or fourth day. If this disorder of the brain continues until the seventh day, there are hopes of recovery; on the other hand, if the delirium ceases on or after the first or second day, and the patient becomes tranquil and feeble, such an alteration is a certain presage of death. If this change took place in the morning, the patients died in the evening; if in the evening, they did not live over the night. At other times torpor came on, and continued through the whole of the disease, so that the patients died without pain, or at least without appearing to suffer any. In some instances, on being asked how they were, the patients replied, "very well," and called for meat and drink; but soon after they sunk into a deliquium

liquium animi, in which they remained motionless, and died.—The pulse was irregular from the beginning. When there was violent head-ache, with high delirium, &c. the pulse was full, hard, strong, and quick; on the other hand, when these symptoms ceased, whether shortly after the attack or after the second or third day, the pulse then became soft, feeble, intermitting, and not to be felt*. In many instances the skin was dry and hot, and the patients complained of a burning sensation, both outwardly and in-

* Feeling the pulse of impestred patients with the bare fingers, is always attended with great risk of taking the contagion, which is so readily communicated by contact. This, however, did not deter Mr. *Samoilowitz*, from feeling the pulse in all the different forms or varieties of the plague, in the usual manner; though others took the precaution of putting on gloves, or having a leaf of tobacco applied to the patient's wrist before they ventured upon this examination. It is evident that much reliance cannot be placed upon the reports of those who felt the pulse through the intervening substances just mentioned. This and other observers have remarked, that after the pulse was once ascertained in each form or variety of the plague, it became unnecessary to feel it any more. According as the head-ache was either dull or acute, the delirium high or low, &c. the physician could pronounce, without feeling the wrist, upon the state of the pulse. Tr.

wardly;

wardly ; in others the heat was not so great ; in some the skin was yellow ; in others it had a pale corpse-like appearance, joined with great flabbiness. The diarrhœa was often accompanied with an incontinence of urine, both which it was sometimes impossible to check ; in such cases, these symptoms (occurring together) were the fore-runners of death. The diarrhœa was common to both sexes ; but the incontinence of urine was observed in female patients only.

3. *The third degree or variety of the plague* occurred in the decline of the epidemic. Its symptoms are the same as those which take place in the first type ; and, therefore, to avoid repetition, we refer to that *.

B. *Ques-*

* If the symptoms in the decline of the plague were precisely the same with those in the beginning, there would be but two types or varieties of the disorder ; the 1st, comprehending the phenomena of the plague at its beginning and in its decline ; and the 2d, the phenomena which belong to its height. But from the observations of *Mertens* and others, it appears that although there is a great resemblance between the plague at its decline and in the begin-

B.

*Questions relative to the Nature, Prevention,
and curative Treatment of the Plague.*

The questions proposed by Prince Orlov to the physicians, and surgeons, were

1. In what manner is the contagion, which is making such great ravages in this place, propagated?

2. What are the symptoms which show that a person is infected with this disorder? In what respects does it differ from other malignant fevers, and what symptoms has it in common with them? How is the patient

beginning (viz. that in both cases the symptoms are less violent and less fatal than those which occur in the middle period or at the height of the epidemic) yet there is also a difference between them, the plague in the beginning of its career being accompanied with petechiæ and other spots, as well as buboes; whereas at the decline, scarcely any other external marks, besides buboes, are observed.

Tr.

himself

himself to know that he is attacked with this dreadful disorder, so as to be able to apply for help at the very beginning? How are those who are constantly with the sick, to know the disorder, so as to be put upon their guard against taking infection? And, lastly, how is the physician to be certain that it is the disease in question *, in order that all possible means may be immediately employed to save the life of the patient?

3. Each of you is required to describe accurately the symptoms of this disorder through its whole course and under all its forms, noticing in what order the symptoms succeed each other, more especially what the symptoms are which accompany each crisis, and what those are which denote more or less danger: lastly, in what space of time, in what manner, and with what outward marks this contagious disorder terminates, whether it be in recovery or in death?

* We suppose this query to relate to those physicians who received reports from the surgeons and their assistants, without visiting the sick themselves. Tr.

4. What are the medicines which have hitherto been administered in the different cases, in what doses, in what stage of the disorder, and with what success? The general result of these observations will determine which is the easiest and most successful method of cure.

5. What is it necessary for the patient to observe when he is taking the remedies, and when he is not; and what sort of regimen is best suited to promote the cure?

6. Lastly, each of you is required to make known, according to his own judgment and experience, what appear to be the best and surest methods by which individuals may escape this terrible scourge, and by which it may be checked, and if possible entirely eradicated; but these methods must be simple and easily put in practice.

My answers to these questions were as follow :

1. That

1. That this contagious disorder was propagated by touching the sick or dead bodies ; by handling infected goods, such as clothes, furniture, and the like ; by the patient's breath ; or by the air of a room, confined and loaded with effluvia from the bodies of the sick ; but not at all by the common atmosphere *. Hence those who avoid all communication with the sick, and never meddle with infected things, remain free from the plague, although they live in the same territory or in the same town where it is making its ravages ; whilst the poor, not shunning communication with the sick, and putting on infected clothes, which they buy cheap or get by inheritance, are continually exposed to the contagion, and are consequently those who are chiefly attacked by

* Although Dr. *Mertens* maintains (what we believe) no physician in these days will be disposed to contradict) that the contagion is not disseminated by the common atmosphere ; yet, in other parts of his Treatise, he admits that the air may become infected to a certain distance by a great number of bodies, dead of the plague, lying unburied. Tr.

the plague *. Now, if the cause of the plague existed in the atmosphere, or that it was carried by it in a state of activity from one place to another, it should follow, that all the inhabitants of the same territory, or at least of the same town, rich as well as poor, should be equally attacked by it ; but

* There are many reasons why the poor must be the chief victims of the plague, whenever it rages in any country ; for 1st, They are the persons who are employed to remove or destroy infected goods, to carry away and bury the dead, &c. 2dly, As they live in small, crowded habitations, when any one of them is attacked by the disorder, all the rest of the same family are exposed to the contagion, in consequence of breathing an air tainted by the breath and other effluvia of the sick. 3dly, They are generally destitute of nurses and other necessary attendants, and particularly they cannot have that change of linen, which contributes in a very great degree to carry off the contagion and promote the recovery. 4thly, When the plague is at its height, the number of sick is so great that it becomes impossible for the physicians and surgeons to visit all of them, even once in twenty-four hours, though to be of real service, the visits should be repeated, in every family, twice within that space of time. Lastly, They have not wherewithal to procure themselves the proper food and diet ; or, if these are provided for them out of the parochial funds, by the contributions of the wealthy, or by government, they do not strictly adhere to them, but fly to spirituous liquors and other hurtful things. Tr.

this is not the case. All, therefore, that can be attributed to the atmosphere, with regard to the plague, is, that according to its different temperature, it disposes the human body more or less to receive the contagion; and that according as its temperature is greater or less, it renders the pestilential miasm more or less violent, or even destroys it; which, indeed, seems to have been the opinion of other writers on this subject*. We have seen in the preceding narrative, that the cold of winter blunted, and as it were froze the pestilential virus, whilst the heat of summer rendered it more active and volatile; nevertheless, at both these seasons, the atmosphere was as healthy as usual.

2. That it was sometimes difficult to ascertain the existence of the plague on its first appearance; but that afterwards it was at-

* *Sydenham* Oper. Sect. II. Cap. 2. and *Van Swieten* Comment. Tom. V. § 1407.

We have deemed it sufficient to refer to these authors, without transcribing the passages which *Dr. Mertens* has introduced. Tr.

tended by certain marks, which distinguish it from every other disease. These characteristic marks are petechiæ, buboes, and carbuncles. When these occur in a disorder which is very rapid in its progress, is accompanied with fever (unless when it destroys suddenly) and is highly contagious, there can be no doubt that such a disorder is the plague *.

To determine with certainty whether a disorder which prevails in any place is the plague, it must have all the symptoms which I have just described in one or more patients. These symptoms taken singly, do not constitute the plague; for many other disorders are equally rapid in their course; petechiæ appear in common putrid fevers; in some malignant fevers carbuncles are met

* The author includes in his definition of the plague the circumstance of the disorder being brought by infected persons or goods from Egypt, or some other province of the Turkish empire; but as this is a circumstance which relates merely to its origin, without serving to mark its properties or portray its features, we thought it foreign to a definition, and have accordingly omitted it. Tr.

with ;

with ; buboes are produced by the venereal disease and scurvy ; and some times, though very rarely, a crisis happens in putrid fevers by abscesses forming under the arm-pits ; but these abscesses arise later in these cases than they do in the plague, and moreover they are not accompanied with buboes and the other symptoms which characterize the plague. The high degree of contagion by which the disorder is propagated from one person to another, enters necessarily into the definition of the plague ; without it there is no plague. In a word, if there is a frequent communication, either by commerce or in consequence of war, with Turkey or Egypt, and some persons, or a great number of persons, are attacked with a disorder which corresponds exactly to the definition above given, it is certain that it is the plague.

3. For the answer to this third question, the reader has only to revert to the description of symptoms in note A of the Adenda. As for the prognosis, it is attended with great uncertainty in cases of the plague.

In some instances, an indisposition apparently slight, is quickly followed by death ; whilst others who seem to be on the point of death, recover *. In general, when the buboes suppurate well, and there is a separation of the eschars from the carbuncles, accompanied with an abatement of the other symptoms, a favourable prognostic may be given.

4. That hitherto medicine had done very little good, the disorder being so rapid in its course as not to allow time for the remedies to act ; but that the Peruvian bark and mineral acids, in large doses, ought, in my opinion, to form the basis of the curative treatment.

From the preceding history of the plague it appears, that those who are attacked with this disorder are affected with nervous symptoms before the fever comes on, and that the fever itself is of a highly putrid nature, ac-

* See *Chenot de Peste*, p. 93, and *Russell's Aleppo*, p. 229 and 235.

accompanied with marks peculiar to itself, and which distinguish it from all other fevers. The proportion of those in whom the plague appears under the form of an inflammatory fever, is very small: and this happens only in the beginning of the disorder, in plethoric subjects; and that in these instances, from being inflammatory it quickly becomes putrid. Thus there are two sets of symptoms in the plague, viz. those which depend on nervous irritation, and those which depend on the putrid condition of the blood. The first I call the *nervous*, and the second the *putrid state*.

In the first, or nervous state, the indication is to promote perspiration by warm acidulated drinks, such as infusions of tea and other herbs mixed with lemon juice or vinegar, camphorated emulsions, camphor julep with vinegar and musk, &c. If ever bleeding is proper, it is at this period, and in plethoric subjects.

In the second, or putrid state, vomits, the Peruvian-bark, and mineral acids are the most promising remedies. The violence and rapidity with which the disease runs its course, require that these medicines should be administered in powerful doses. In the month of September, a woman, aged twenty-four, was seized with head-ache, fever, and vomiting; shortly after, a bubo came out on the right groin, and another under the arm-pit on the same side, of the size of a hazel nut; the next day small petechiæ appeared over the whole body; she was weak and drowsy; the tongue was white and moist; the urine pale; and she complained of head-ache and oppression about the præcordia. After I had made her vomit by giving her twenty grains of ipecacuanha, I ordered her a very strong decoction of Peruvian bark, to a quart of which were added a drachm and a half of the extract of the same bark, a drachm of the acid elixir of vitriol of the London Pharmacopœia, and an ounce of syrup of marshmallow; she took three ounces of this mixture every other hour, and besides this, she also took

four

four times in the day, half a drachm of Peruvian bark in powder. For her common drink, she had a decoction of barley, acidulated with spirit of vitriol. The buboes increased gradually, insomuch that in the space of a few days they were as large as walnuts; they continued in this state, without any signs of suppuration. The patient began to mend regularly, and at the end of a week, she was almost entirely recovered; she was then removed, in spite of all my remonstrances to the contrary, to the hospital, from which she was dismissed a short time afterwards, and came to see me, in perfect health.

By this mode of treatment I am persuaded that those who have the plague in its moderate and slow form, may be rescued from death. This is further confirmed by the cases of three children, one of whom was only a year old, and the two others still younger; each of them had a pestilential bubo in the groin, accompanied with fever and great debility. After they had taken the decoction of Peruvian

vian bark, mixed with the extract, they got better; the buboes ripened and yielded a good pus. Two of these children got quite well; the third was carried off during his convalescence, by convulsions occasioned by the teeth. Although this happened in the month of December, when the disorder, being more mild, allowed many to recover; nevertheless these facts serve to establish the efficacy of the remedy, since the symptoms of the plague are always worse in children than adults, and its good effects were seen in all the three patients at the same time.

But the cure of the plague by the mineral acids and Peruvian bark, is only to be expected when the disease appears under its less violent forms. In a great number of instances (where the disease has been more violent) these remedies have been prescribed, not only without effecting a cure, but even without retarding death for a moment. Various other medicines, such as theriaca (which has been so improperly cried up in the plague) camphor, dulcified spirit of nitre, &c. have in
like

like manner failed ; so that we are compelled to acknowledge, that the plague (under its more violent forms) is of such a malignant nature as not to yield to any medicines with which we are yet acquainted, howsoever well adapted they may, *à priori*, seem to be for getting the better of this disorder. From analogy and the preceding facts, I am inclined to place more reliance upon the Peruvian bark and acids, given in large doses, than upon any other remedy ; joining with them, to obviate debility, camphor, elixir of vitriol, wine, and blisters. Some were relieved by gentle emetics, such as ipecacuanha. A surgeon who had brought with him from England a great quantity of *James's Powder*, prescribed it to several patients ; but I never heard that it answered better than ipecacuanha or other emetics *. Purgatives, even of the most

* From the manner in which the author makes mention of *James's powder*, it appears that it was administered in such large doses as produced vomiting. It should have been given in small quantities, so as to have acted as a diaphoretic

most gentle sort, were hurtful ; they brought on a diarrhoea which it was scarcely possible to check, and which weakened the patients exceedingly. I consider bleeding to be very improper in the plague ; nevertheless I would not forbid it entirely, where the disease, in plethoric subjects, assumes an inflammatory form, and is accompanied with phrenitis ; which, however, was seldom the case in the plague at Moscow *.

5. That during the convalescence, wine, malt-liquor, kuas (the small beer of Russia)

phoretic, both alone, and in conjunction with opiates. Perhaps, however, it may be objected that this and other antimonials, in small doses, repeated at intervals of three or four hours, are too tardy in their operation for a disease so rapid in its progress ? In larger doses they would be apt to purge. Thus there seems to be little encouragement for administering them in any way, in cases of the plague.
Tr.

* As the author's observations relative to the treatment of the buboes and carbuncles, coincide with those of other writers on this subject, they have been purposely omitted. See *Russell on the Plague*, Book II. Chap. V. Tr.

light

light vegetable food *, and above all fresh air, were proper and necessary. The same diet which is suited to putrid fevers is equally suited to the plague. Nothing answers better for raising the drooping spirits and recruiting the strength of the weak and convalescent, than well fermented malt liquor, or wine and water.

6. That as to checking its progress and entirely eradicating the pestilence, that, in the present extended state of the disorder, would be attended with much difficulty; but that whatever tended to lessen the communication between the sick and healthy, and to prevent the latter from coming in contact with infected clothes, furniture, &c. would contribute to this end; and that I hoped the frost would not only weaken the contagion, but in a great measure destroy it.

* Why no animal food? *Orræus* found broths and soups seasoned with salt and vinegar, and having the fat taken off them, and even boiled meat of a light texture, to be very restorative to the convalescent. Tr.

When physicians of science and probity declare that they are convinced of the existence of the plague in any place, it is incumbent on the magistrates, without paying any regard to the contrary opinions of other practitioners, to take the necessary precautions for preserving the health of the public, by removing, as soon as possible, all infected persons, as well as those who are under suspicion of being infected, out of the town, to a house standing by itself, and to surround the building with guards, in order to cut off all communication. As it is of great importance in the beginning of the plague to suppress it in secret, an infected family may be removed in the night-time, without giving rise to any suspicions concerning the disorder; which if it has, as yet, appeared only in this family, may be thus extinguished, without exciting a general alarm *. But
when

* If there should be any doubts respecting the nature of the disorder on its first appearance, and because, as yet, only a single family happens to be attacked with it; Dr. *Mertens* proposes that criminals condemned to death should
be

when several families have become infected, it is then no longer possible to keep it a secret from the public, since the precautions which it is necessary to employ must make it known. In such a case, the impested, as well as all those who have dwelt under the same roofs with them, must be cut off from all further communication with the rest of the inhabitants. The clothes and furniture belonging to the sick (excepting such things as are of a hard and solid texture, which it will be sufficient to wash with vinegar) must be burnt. The goods that are thrown into the fire must not be touched with the hands, but be taken hold of by tongs and poles fur-

be shut up with the sick, and be made to wear their clothes. Thus in two or three weeks, according as they became infected or not, it would be decided whether the disorder was the plague. But in a free country, like England, neither the removing of a family in the night-time, under the circumstances just mentioned, nor the exposing of criminals to the contagion, are measures which would be deemed justifiable. Indeed, it seems almost impossible to stifle the plague, in any country, in the very beginning, before it has become publicly known and excited a general alarm. Tr.

nished

nished with hooks at the end * ; in the same way, the dead bodies are to be put into the carts, that carry them to the burying-grounds. Persons who may be relied on, should be appointed to see that all these directions are strictly complied with. The relations and friends of the sick should be persuaded to burn the clothes and other effects which they may at different times have received ; and the health of such friends and relatives should be well watched by the physicians.

A Board of Health, composed of some persons of rank, two or three physicians, and as many of the principal citizens, should regulate, under the authority of the magistrates, all matters relative to the health and

* Those who are employed to burn the goods, should not stand too near the fire, so as to be exposed to the thick smoke which arises from it ; and the more effectually to destroy the pestilential particles, it may be useful to throw some gun-powder or nitre into the fire. It is infinitely better to burn the infected goods than to bury them, as some authors recommend ; since people may be tempted by avarice to dig them up again.

safety

safety of the inhabitants. This Board or Committee should divide the town into quarters or districts, in each of which they should appoint a physician to visit the sick; they should enjoin the inhabitants to apprise them whenever any individual in a family is taken ill; and they should order that no person be buried until the corpse shall have been examined by one of the faculty, and a note be given certifying the disorder of which the person died. If there should not be a sufficient number of physicians, the surgeons may be employed in this business.

The poverty of the common people, and the avarice of others in better circumstances, have, in all places and at all times, been the chief causes by which the contagion has been propagated. The poor man, who dreads hunger more than death, cannot bear to see himself deprived of the pittance of property left him by a relation or friend, and accordingly endeavours to secure in secret all that he can; whilst the avaricious man, delighted

G

with

with the thoughts of making a good bargain, buys what is offered for sale, regardless of the risk he runs of taking the contagion. There is but one effectual remedy for this evil, which, as long as it subsists, renders all precautions whatever of no avail. The remedy I mean is to allow a sum of money from the public treasury for the payment of the value of the goods which are burnt. In fact, the condition of those whose family is attacked with the plague is woful enough; deprived of their friends and cut off from all society, they have little else to expect but death: is it fit, then, that their situation should be rendered still more deplorable by having their goods taken from them and destroyed, without any compensation; and thus to have no other prospect left them but that of extreme indigence, in case of recovery? Let persons be appointed to appraise fairly the goods which are burnt, and pay for them accordingly; or, let the money be deposited in the hands of some banker, or of a committee chosen for that purpose, with the claimant's name, in order that if he recovers,

it may be given to him, or in case of death, to his heirs. Not only those among the poor who are ill of the plague, but those also who are suspected of having the contagion, should be fed and maintained at the public expence; humanity, as well as the safety of the rest of the inhabitants, requires that this should be done. A sufficiently large sum should be appropriated to this purpose, in order that, in case of urgency, there may be no difficulties on this head. If every thing is arranged in this manner from the first appearance of the plague, the expences will not be very heavy, the contagion will be easily stopped, and the evil will be stifled in its infancy. When the disorder has ceased, all who have recovered from it, as well as those who have attended upon the sick, should remain shut up for some time until all doubts are removed as to their being capable of communicating the contagion, on mixing with the inhabitants again. Forty days (whence the term *quarantine*) are the usual probation; but although this space of time may be requisite for the complete purification of goods, it

seems to be much longer than is necessary in the case of infected persons, or persons merely suspected of having the contagion *. Before those who have been performing quarantine are allowed to have communication with the rest of the inhabitants, they should be washed all over with vinegar, should put on new clothes (their old ones having been previously burnt, as well as their furniture, &c.) and have their houses well fumigated. Besides all this, it will further be proper to make a strict search for several months after, in order to be satisfied that the contagion is not concealed in any part of the town, and that nobody has locked up infected clothes or goods in chests, trunks, &c. or hidden them in any other places; for the plague might, when least apprehended, spring up again from such a source. The pestilential germ confined in clothes or bales of merchandise acquires a greater degree of virulence, and may in that manner be transported to very great distances, and be preserved for a great

* See *Chenot de Peste*, p. 208.

length of time. The deadly power of this poison is so much increased by being shut up in bales of goods closely packed and well defended from the air, that there are instances of persons who were seized with the most violent symptoms and suddenly killed, on opening them*. In the last century, a twelvemonth after the plague had ceased at Warsaw, *Erndtel*, who relates the following anecdote, passed through that town in order to attend the Court to Marienburgh and Dantzic: in the town of Langenfurt, a coachman's wife, being near the time of her lying-in, brought with her in the month of October a mattress on which some persons, who had died of the plague a year before, had lain. Having made use of it, she was soon seized with the same disorder, accompanied with inguinal buboes, and was shortly afterwards delivered; but an hæmorrhage from the womb coming on, she died, as well as the child. The husband, also, died soon

* *Antrechaux*, Relation de la Peste, p. 65. *Chenot*, de Peste, p. 166.

after, having buboes and carbuncles; and many other persons caught the infection, which proved fatal to more than twenty of them. This contagion continued to manifest itself until the month of February, without, however, occasioning any more deaths, the persons belonging to the Court being dispersed in different villages and country seats. It ceased altogether in the beginning of March *. After the plague has spread itself and become prevalent, its progress is resisted with much more difficulty, and it threatens to become a general calamity. We must not, however, wholly despair; for if, on the one hand, the Magistrates and the Committee of Health exert themselves to the utmost, and on the other, the inhabitants are tractable, the evil may yet be suppressed, especially if the season be favourable. The first object of attention is, to prevent it from being carried into the neighbourhood and other places. To this end, it will be proper to make known in a printed declaration, that

* *Erndtel Warfavia physice illustrata*, p. 171.

the disorder which rages is the plague ; that the contagion does not exist in the air, and is only communicated by contact of the sick and infected goods : In this advertisement the inhabitants should be called upon to obey punctually the orders which may be given for the safety of the public at large, as well as of individuals ; they should be warned against buying clothes or other effects which have been used ; and dealers in second-hand goods and clothes should not be suffered to carry on their trade : Further, if the plague rages in one quarter of the town only, all communication between that part and the rest of the town should be immediately cut off.

In the beginning, when only a few families have become infected, the public safety requires that they should be sent out of the town, or at least removed to some detached building, so as to be deprived of all further intercourse with the rest of the inhabitants ; but this should be done in a humane and soothing manner, and with as little inconvenience as possible to these unfortunate persons.

When the calamity, however, has arrived at such a pitch, that great numbers are attacked with the disorder, and that it has spread itself over every part of the town; we can no longer hope to eradicate it entirely by these precautions. At this period it would be cruel and unfeeling to add to the sufferings of so many afflicted families, by forcing away the sick from the healthy, by depriving the father of the presence of his children, the wife of the attentions of her husband, and the old man of the comfort of his family. Under such circumstances, we should only aggravate the evil, by compelling the sick to conceal their illness. Besides, it is impossible to find buildings sufficiently large and convenient for such a vast number of patients. Nevertheless, every exertion must be made to stop the progress of this terrible disorder, which propagates itself by contagion, in every direction.

In this melancholy situation what adds to the distress is, that it is difficult to contrive measures which shall on the one hand be consistent

sistent with the humanity with which the unfortunate sufferers should be treated, and on the other, with the public safety. If you drag from their houses the fathers of families, mothers, and children, and thrust them into hospitals, you rob them of the only consolation which is left them, you heap misery upon misery, and plunge them into despair, from which it is impossible for them to recover. On the other hand, although the contrary plan may seem more humane, it is nevertheless equally cruel and fatal to the public at large to neglect all precautions, and to let the contagion take its own course; for in that case many towns and whole provinces would become a prey to the pestilence. We must, therefore, take the mid-way between these two extremes.

Let an hospital with the houses near it, or a whole suburb *, be appropriated for the recep-

* By being distributed in this manner into several houses the sick will be less hurtful to each other; they will breathe a purer air, and recover much sooner. *Mead* advises

reception of the poor who are seized with the plague; let every thing which is requisite for their support and cure be provided there; and let them repair thither of their own accord, and not be brought by compulsion. Let other persons be allowed to remain with them, provided the infected houses have a common mark upon the doors,

vises the impested to be removed to tents pitched out of the town. (This is not quite accurate. *Mead's* words are, — “as the advice I have been giving is founded upon this principle, that the best method for stopping infection, is to separate the healthy from the diseased; so in small towns and villages, where it is practicable, if the *sound remove themselves into barracks or the like airy habitations*, it may probably be even more useful, *than to remove the sick*. This method has been found beneficial in France after all others have failed.”) Tr. I do not think a better method for stopping the contagion can be suggested; but the season of the year, climate, and other circumstances must often render this measure impracticable; in that case, the doors and windows of the sick-rooms should remain open, and a free circulation of air be constantly kept up. The exposure to the air and wind seems to me to be the principal reason why the plague makes less havoc in armies that are encamped; for although the air or wind has very little power over the poison after it has entered the circulation, nevertheless it carries off the effluvia and dissipates them more quickly; so that the sound are not so readily infected by the sick.

by which they may be distinguished from the rest, in order that sound persons who enter them may be put upon their guard. Let the Board of Health circulate printed directions how the uninfected are to manage when they approach the sick, warning them to keep the doors and windows open, to avoid the breath of the infected, and the effluvia from their bodies and excrements; to sprinkle the rooms frequently with vinegar; and to avoid, as much as possible, touching with their bare hands either the bodies of the sick or infected goods; or if they have touched them, to wash their hands immediately with vinegar.

Physicians, surgeons, and nurses, must be appointed to take care of the impested, and have handsome salaries allowed them *.

* The physicians and surgeons, and all those who are about the sick, should put over their clothes a cloak made of oil-cloth; they should wear gloves and boots made of the same material, which should be frequently washed with vinegar; and they should hold before the mouth and nose, a sponge moistened with vinegar. On other preservatives, see D.

The Magistrates should take care that the dead bodies do not remain unburied longer than is absolutely necessary for determining the disease by which life was destroyed.

Those who are employed in burying the dead should be protected from the contagion, by having cloaks and gloves of oil-cloth, which should be frequently washed with vinegar; and that they may not touch the dead bodies with their hands, they should be provided with hooks and other instruments for lifting them up.

The burying-grounds should be out of the town, and at some distance from the high-roads; the corpses should be thrown into deep trenches, and be immediately covered over with a thick layer of earth, not only to prevent the effluvia that would otherwise arise from them, but also to secure them from dogs and crows.

Although, as I have before remarked, the atmosphere at Moscow, even when the
plague

plague was at its height, was not at all vitiated, and by no means contagious, not only in the winter but also in the middle of summer, when the heat is as great as in any other parts of Europe, excepting such as lie immediately to the south; yet, if a great number of bodies dead of the plague are suffered to lie unburied and putrefy, they may impregnate the air with their effluvia to such a degree as to render the atmosphere (otherwise incapable of propagating the contagion) infectious, especially in summer, and thereby cause it to spread inevitable destruction to the neighbourhood. It is well known that the carcases of all animals in a state of corruption fill the surrounding atmosphere with effluvia that are accompanied with an intolerable stench, and that these effluvia, though they do not produce the plague, are nevertheless the cause of putrid, malignant fevers. Accounts are given by several authors of such-like epidemic diseases being produced by the fætor exhaled from the dead bodies left on the field of battle, or from the bodies of animals putrefying in stagnant waters or on the banks

of

of rivers. Among others, *Forestus*, (Lib. 4. Obs. ix. Tom. 1.) gives the history of a very malignant epidemic, occasioned by an enormous fish of the whale kind, which lay corrupting on the sea-shore. But how much more pernicious effects must the putrefaction of bodies dead of the plague have, since in this disorder the simple effluvia from the sick are so fatal to persons in health?

(The observations which follow on the airing of goods, on quarantine, &c. coincide so much with those that are to be found in every treatise on the plague, that they are omitted by the Translator.)

C.

Of the Antipestilential Fumigating Powders.

The houses and rooms of persons infected with the plague are purified by firing gunpowder in them. At Moscow we employed
with

with success a powder, called *antipestilential*, of which sulphur and nitre formed the basis; some bran and other vegetable substances, such as abrotanum, juniper-berries, &c. together with certain resins, were added; but in my opinion these resins are totally useless, and only increase the expence*. The acid vapours

* The following is the composition of these fumigating powders, as published by the Council of Health. (See *Oræus*, p. 136, 137.)

The strong antipestilential powder consisted of juniper tops (cut small,) guaiacum shavings, juniper berries, bran, of each 6 lb, nitre 8 lb, sulphur 6 lb, myrrh 2 lb.

The weaker antipestilential powder consisted of the herb abrotanum 6 lb, juniper tops 4 lb, juniper berries 3 lb, nitre 4 lb, sulphur $2\frac{1}{2}$ lb, myrrh $1\frac{1}{2}$ lb.

The odoriferous antipestilential powder consisted of calamus aromaticus 3 lb, frankincense 2 lb, amber 1 lb, storax and dried roses, of each $\frac{1}{2}$ lb, myrrh 1 lb, nitre 1 lb 8 oz. sulphur 4 oz.

Of these powders, the first was employed to fumigate the houses and goods of the infected, such as woollens, furs, &c.; the second, for fumigating houses only suspected, and more delicate articles, which would have been spoiled by the first; the last was employed (by way of prevention) in inhabited houses.

(We

vapours let loose on burning nitre and sulphur together, remain a long time suspended in the air *. The greater or less strength of these powders depends on the proportion of sulphur and nitre to the other ingredients. After burning the rags or other litter which may be found in the rooms, they are fumigated by throwing one of these powders on a chafing-dish or pan of coals, the doors and windows being shut, to keep in the smoke and vapour for a sufficient length of time. This vapour is hurtful to the lungs, and produces suffocation ; hence the person who throws the powder upon the burning coals should get out of the room as fast as possible. This process is

(We are now acquainted with a mode of destroying contagion, much more simple and efficacious than that of fumigating with such compound and costly powders as those mentioned in the preceding note ; we mean *the vapour extricated from nitre by means of the vitriolic acid*. See an Account of the experiments made on board the Union Hospital-ship, to determine the effect of the nitrous acid in destroying contagion. By James Carmichael Smith, M.D. &c. London, 1796. Tr.)

* The author adds, that the smoke from the vegetable substances burnt with them helps to keep the acid vapours longer suspended. We do not see how. Tr.

repeated

repeated three or four times in the space of twenty-four hours for several days together; after which the doors and windows are thrown open.

D.

Of Preservative Remedies.

We shall content ourselves with abridging, rather than translating at full length, what the author offers on this head. Among other preservatives, *issues* are taken notice of. The author himself had one made in his left arm, which he kept open for a twelvemonth; but he is inclined to attribute his exemption from infection rather to his having avoided the contact of the sick and infected goods, than to this remedy. It appears that four surgeons at the principal pest-hospital died of the plague, notwithstanding they had all of them issues. Hence their preservative virtues may be questioned; yet as they have been recommended by others, and are attended with little inconvenience, he thinks it would be

proper for those who are obliged to go among the infected, to have one made in the arm or leg, or both.—*Sweet spirit of nitre* was esteemed an excellent preservative by some; they took twenty or thirty drops of it upon a lump of sugar several times a day. Others took, with the same intention, the *Peruvian bark* under different forms; but as they all kept out of the way of the contagion at the same time, the preservative powers of these remedies remain very doubtful. The common practice of carrying *camphor* in the pocket or sewed in the lining of the clothes, has nothing to recommend it. In like manner the *smoking of tobacco*, though it has been so strongly recommended by *Diemerbroeck* and others, is by no means a certain protection against the contagion. The Turks, says *Dr. Mertens*, are continually smoking their pipes; and yet great numbers of them are swept off by the plague every year. This reflection was not sufficient to do away the prejudice in its favour, so difficult is it to destroy a received opinion, howsoever false it may be. While the plague was raging at Moscow, many Russian gentlemen and foreigners had
recourse

recourse to the smoking of tobacco, as an infallible preservative. Those who were accustomed to the pipe, smoked oftener, whilst others gradually brought themselves to bear it, until they saw some among the foreigners of the lower class carried off by the plague, in spite of the use of this remedy. The master chimney-sweeper at the foundling-hospital, who had formerly served in the Prussian army, had so much faith in the smoking of tobacco, that he was always seen with a pipe in his mouth from morning to night; and boasted that by this means he should be proof against the plague. Disregarding all other precautions, even when the disorder was at its height, (viz. the month of September) he got over the fences in the night-time, in order to go and see his wife and children who were in the town. He was immediately seized with head-ach and vomiting, and the next day he had a bubo in the groin and under the arm-pit, accompanied with great debility and fever. He died at the end of forty-eight hours. His apprentice, twelve years of age, had a large flat bubo under the armpit, and followed him soon after.

From the account published by Count *Berchtold* at Vienna, in 1797, it would appear that the best preservative method is that recommended by Mr. *Baldwin*, the British Consul at Alexandria. It consists simply in anointing the body all over with olive oil. According to the same account, friction with warm oil is not only a preservative, but also a curative remedy. See the second volume of *Duncan's Annals of Medicine*.

E.

Of the means by which the Foundling-hospital at Moscow was kept free from the Plague.

I shall now give a particular account of the means by which the Foundling Hospital was kept free from the plague, during the whole time that it raged at Moscow; in the last six months of which it swept off so many thousands of inhabitants. From this account it will easily be seen how possible it is in times of pestilence, to keep one's self, one's family, and whole buildings, not only private but public, free from infection.

The Foundling Hospital* is situated in the middle of the city, at the conflux of the Yausa and the Moscua. It occupies a space of ground, at that time only inclosed by a hedge six feet high, whose circumference measures nearly a French league. On this has been erected a building which might easily be made to contain five thousand foundlings. That part of it which was finished in 1769, contained one thousand children and three hundred adults; the rest, consisting of masters, servants, workmen, and soldiers, who amounted to nearly one hundred, lived in houses built of wood adjoining the stone edifice and standing within the inclosure. This inclosure had three gates.

* This asylum of innocence and misfortune holds the first place among all institutions of the same kind in Europe. It was founded by the Empress Catherine the Second. Under the auspices of this Sovereign, and by the great attention of Mr. *de Betzky*, to whom his country owes infinite obligations for the devotion of his time and fortune to the encouragement of the arts and the promotion of undertakings for the public good, this institution had nearly attained to perfection, at the time when this account of it was written.

In the month of July, as soon as I found that the plague had spread itself in the town, I requested the Governors of the hospital to order all the gates to be shut, excepting that where the porter lived ; and not to suffer any person to come in or go out, without permission from the principal inspector. I further requested them to lay in a large stock, from places not yet infected, of flour, cloth, linen, shoes, and other necessaries. In the month of August, when the plague was raging with great fury, it was no longer permitted for any one to enter but myself. Persons who lived out of the enclosure were hired to purchase all the necessaries of life, and to carry letters. I gave the porter some written directions, in which I put down every thing he was to allow to enter, and under what precautions. The butcher threw the meat into large tubs filled with vinegar, from which it was afterwards taken out by the under-cook. I prohibited the admission of furs, wool, feathers, cotton, hemp, paper, linen, and silk ; but I allowed sugar-loaves to be received, after taking off the paper and packthread. Letters
were

were pricked through with a pin and afterwards dipped in vinegar, and dried in the smoke produced by burning juniper-wood. The inhabitants of the building were allowed to speak to their relations and friends, who stood at a certain distance out of the gate *. Being obliged to purchase two hundred pair of boots and shoes, in the month of October; I ordered them to be immersed for some hours in vinegar, and afterwards dried.

I visited all the sick in the house twice every day; the found were examined by two surgeons night and morning, who informed me whenever they found any of them indisposed. Whenever any symptoms occurred in a patient which appeared to me doubtful, I kept such patient apart from the rest, until I was satisfied the disorder was not the plague. In this manner I detected the plague

* I caused to be fixed up at the gate near the porter's lodge, two sets of railing, at the distance of twelve feet from each other. The people belonging to the hospital stood at the inner railing, and those who came to see them, at the outer.

seven times among the soldiers* and workmen belonging to the Foundling Hospital; but as I separated them on the first appearance of the symptoms, they none of them infected the others, except the master chimney-sweeper, who gave it to his apprentice. After the month of July, we ceased to admit any more foundlings or pregnant women. I proposed to the Governors to hire, in the mean while, a house for this purpose in the suburbs, which was not determined upon until the month of October †. At this time there still continued to die in the town above

* There was always a guard of twenty-two men and an inferior officer. After July, I obtained an order not to have them changed.

† It was not without great difficulty that we got a house for quarantine, as well on account of obstacles occasioned by the public calamity, as from the scarcity of houses sufficiently roomy. Hence this business was not settled until October. In the mean time, many children continued to be exposed at the hospital-gate. Some of these I put into a wooden house in the vicinity; and Mr. *de Durnovo* took others of them under his roof. As soon as the above-mentioned quarantine-house was ready to receive them, which was not the case till November, I sent them thither.

a thou-

a thousand persons in a day. I had the children who were brought to this quarantine-house, stripped to the skin ; after which their clothes were burnt, their bodies washed all over with vinegar and water, and new clothes put upon them. I kept them for the space of a fortnight in three rooms detached from the rest ; if, after that time, no signs of the plague appeared among them, they were put (having previously changed their clothes) each in the order in which he finished this first term of probation, in the common dwelling-rooms of the quarantine-house ; here they remained another fortnight, before they were removed to the Great Hospital. I visited every day these children and the lying-in women *. One infant was brought with a pestilential bubo, and two others, during the time of their quarantine, had the plague with buboes, as mentioned in a former part of this

* In this quarantine-house I also established a small hospital for the reception of pregnant women, and the care of them after their delivery, as long as the plague might continue. Mr. *de Durnowo* undertook the management of this establishment.

treatise. By putting them in separate rooms along with their nurses, the contagion was prevented from spreading *. I had thus the happiness of rescuing from death about one hundred and fifty children †, brought to the quarantine-house after the month of October. In the Spring of 1772, every thing was restored to its former footing.

* As it was possible for the plague, though it declined in the town, to have been kept up in this quarantine-house by the children that were daily brought there and by the lying-in women; in order to provide against such an event and in compliance with the orders of the Empress, Mr. *de Durnowo* and myself presented a memoir, containing a detail of the regulations and precautions above-mentioned, to the Committee of Health, who were pleased to signify their approbation thereof.

(Here follows in the original, the letter of approbation from the Committee of Health, which though it is highly flattering to the author, is unimportant to the reader, and is therefore omitted by the Translator.)

† In the beginning of the year 1772, I had the remainder of the children who had been received into the quarantine-house, admitted, a few at a time, into the Great Hospital. Their number, including orphans, whose parents had been carried off by the plague, and new-born infants, amounted to one hundred and fifty.

11X85
COUNTWAY LIBRARY OF MEDICINE

RC

178

R9 M552

